JUREKSI (Journal of Islamic Economics and Finance)
Vol.1, No.2 Mei 2023
e-ISSN : XXXX-XXXX p-ISSN : XXXX-XXXX, Hal 31-47

PENERAPAN METODE JUST IN TIME DENGAN METODE TRADISIONAL DALAM MENINGKATKAN EFISIENSI BIAYA BAHAN BAKU (STUDI PADA UD.SIDO RUKUN)

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Abstract

Rapid development in the industrial sector today resulted in an increasing level of competition faced by each company in achieving the company's goals. To be able to compete in seizing the market every company will try to outrank each other or even drop each other, this is strived to achieve maximum profit. To achieve a decent profit, one effort is to improve the quality of products produced and reduce costs incurred. For the economic actors in the face of the competition can use all the potential that exists effectively and efficiently. One of the strategies that exists today in the development of manufacturing technology today with Just In Time (JIT) system. According to Agus (2010: 2) Just In Time is "A management philosophy aimed at eliminating waste that occurs in all aspects of manufacturing and other activities related to the manufacturing process."

Keywords : development, maximum profit

I. PRELIMINARY

Rapid development in the industrial sector today resulted in an increasing level of competition faced by each company in achieving the company's goals. To be able to compete in seizing the market every company will try to outrank each other or even drop each other, this is strived to achieve maximum profit. To achieve a decent profit, one effort is to improve the quality of products produced and reduce costs incurred. For the economic actors in the face of the competition can use all the potential that exists effectively and efficiently. One of the strategies that exists today in the development of manufacturing technology today with Just In Time (JIT) system. According to Agus (2010: 2) Just In Time is "A management philosophy aimed at eliminating waste that occurs in all aspects of manufacturing and other activities related to the manufacturing process."

According to Hansen and Mowen (2006:15-18) states that changes in the business environment include: The increasingly global economic competition has triggered increasingly intense business competition between companies, customers demanding product quality and low prices on products generated by the company, and time becomes one of the elements of competition within the business environment. The changes in the business environment ultimately trigger each company to rethink other efforts or efforts that will improve productivity (fina nsial or capital, labor, product, organization, sales, and production), efficiency, quality, effectiveness, timeliness, and service delivery are expected to increase the competitive *advantage of the* company so that it can survive and be able to compete in the global market. The company lives in a fast-changing, dynamic, and complicated environment. In terms of business, the environment is a pattern of all conditions or external factors that affect the life and development of the company. The environment includes political economy and government policies, markets and competition, social and cultural suppliers and technology.

Every company generally aims to maximize profit. Therefore, to achieve maximum profit is required a system for the ability of a company can achieve that goal. (Simamora, 2012: 99). By implementing this strategy, the company will be able to suppress the wastage that occurs especially in inventory management.

Received Mei 24, 2023; Revised juni 17, 2023; Juli 10, 2023
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By applying the Just In Time system, it is expected that the company in its production process will have low cost, low selling price, good quality, and timely delivery ability to the customers. In industrial companies, raw materials play an important role for the survival of the company, namely to maintain the economic stability of the company. Inventory is one of the most active elements in a company because it functions to connect sequential operations in making an item until delivery to the consumer. Therefore the company needs to hold the planning and control of good raw material inventory .In order for the production process within the company can run smoothly so that can be obtained the optimal quantity and expected cost savings used for production in the company

The cost efficiency to date is the most widely used by the company that the company can survive. But do not let the cost efficiency lead to a decrease in the quality of products and services to consumers so that the right decision is also very necessary to support the efficiency policy. These problems stem from a basic economic problem, namely the allocation of limited resources, while on the other side of the company will grow and develop. With such circumstances, the company must have the ability to maintain or maintain the continuity of the production process so that the implementation of the production process does not experience obstacles and earn profits. If in the implementation of production process is disrupted then the process of achieving company goals will be hampered and will harm the company. In terms of production process, raw material inventory within the company plays a very important role in supporting the continuity of the production process, although there are other factors that are important but raw material inventory will greatly affect the implementation of production. Therefore the company must be able to control the problem of raw material inventory well. Based on the above background it can be formulated a problem that is " How Implementation of Just In Time Method with Traditional Methods in Improving Cost Efficiency of Raw Material Supplies at UD. Sido Rukun? "

II. REVIEW OF LITERATURE

Definition of *Just In Time*

Just in Time (JIT) is a production system designed to get quality, reduce costs, and reach time submission as efficiently as possible by removing all types of waste contained in the production process so that the company is able to deliver its products (either baran g or service) according to the will of the consumer on time. (Simamora, 2012: 99).

Ginting (2007: 231) in his book The Production System explains that *Just In Time* is "Integration of a series of design activities to achieve high volume production using minimum inventory and raw materials, WIP and finished products".

Hansen & Mowen (2009: 217) states that *Just InTime System* is "A system based on the pull of demand that requires goods to be pulled through the system by existing demand, rather than pushed into the system at any given time based on anticipated demand".

Render & Haizer (2010: 314) states that *Just In Time System* is "A sustainable approach and a forced settlement that focuses on output and inventory reduction".

Witjaksono (2013: 221) discloses JIT (*Just in Time*) is a business philosophy that specifically discusses how to reduce production time in both manufacturing and non-manufacturing processes. In addition, also described in his book Hamming (2007: 278) that the production system JIT *(Just in Time)* is a management strategy preparations to apply the concept to increase the ratio of return on investment (ROI / *Return on Investment)* of a business by reducing inventory and costs associated with inventory. Inventories include inventories of raw materials , work in progress, and the supply of finished goods.

Based on the above explanation, the researcher concludes that *Just In Time System* is a system where the product is produced when the demand and in its production activities eliminate the waste and produce according to the needs of consumers in a way as efficiently maybe.

According to S ofyan (2013:160) The non value-adding (*value added*) in production includes: 1). *Over production* 2). *Waiting time* 3). *Transportation* 4). *Procesing* 5). *Inventory* 6). Unnecessary Movement (*Motion*) 7). *Product Defect* 8). Creativity of unused employee.

Meanwhile, according to (Suprajono, 2005: 60) sources of waste include:

a. Unemployed supplies which are a waste of scarce material resources ;
b. Unemployed stock storage, which will waste a limited space;
c. The components of semi-finished goods and finished goods are defective, which is a material waste.

According Krismiaji (2011: 8), ideas that support *Just In Time* are as follows :

a. Simple is better.
b. Emphasis on quality and continuous improvement.
c. Maintain inventory that is a source of waste and ugly work is hidden.
d. Any activity or function that does not add value must be omitted.
e. Goods are produced when needed.
f. Workers must be skilled and participate in improving product efficiency and quality.

The success of this system is due to the principle or foundation of *Just In Time* is to overcome the waste of production (*waste*). Production wastage can be eliminated on a large scale, ie improvements in quality and lower production costs. Both of these make the company more competitive because the main goal of *Just In's Time* is to improve profit and competitive position companies that can be achieved through the effort of cost control, quality improvement, and improvement of delivery performance.

Roles, Purposes, and Benefits *Just In Time*

In *Just In Time* system there are several important roles that produce a product only when needed and only in the quantity demanded by the customer. According to Kuncoro (2005: 293) argues that *Just In Time* has several important roles :

a. Increase profit.
b. Enhance the company's competitive position achieved through cost control, quality improvement, and quality performance improvement.

According to Krismiaji, (2011: 125) the main goal of *Just In Time* is to produce the product only when it is needed and only generate the quantity of product as much as the customer requested.

According to Hansen & Mowen (2005: 478), *Just In Time (JIT)* has two aim strategic, ie to increase profits and to improve the company's competitive position. Both of these goals can be achieved by controlling costs (which enables better price competition and increased profits), improving delivery performance and improving quality.

While the benefits of *Just In Time* (Indiscribd, 2009) are :

a. Decreased inventories - Biaya "reduced", investment in inventory.
b. Increased quality control - Suppliers are more com p lit.

Basic Principles *Just in Time*

To produce the method *Just In Time (JIT)* then there should be eight the principle that should be considered the basis of consideration in determining system of production strategy, namely (Jaelani, 2009):

a. Produces according to the master production schedule order.
   The new manufacturing system will be operated to produce the product wait after obtained certainty of order in amount certain sign in. Its main purpose is to produce *finished goods* timely and limited

to the amount to be consumed only, for that production process will be produce as many times as needed and immediately sent to customers who require to avoid the stock and reduce the cost of storage.

b. Production in small quantities
Production is done in small lot *(lot size)* for avoid planning and time lag as complex as it is in production of large quantities. Flexibility of production activity will be possible done, because it makes it easy to do adjustments in the production plan mainly face changes in market demand
c. Reduce waste (eliminate waste)
Wastage *(waste)* must be eliminated in every area of operation there is. All use of input sources (material, energy, clock working machines or people, etc.) should not exceed the limit the minimum required to achieve production targets.
d. Continuous product flow improvements (continuous product flow) improvement).
The main goal is to eliminate the processes that are not productive that can hamper the smooth flow of production.
e. Improving the quality of the product *(product quality perfection).*
Product quality is the goal of *Just In Time (JIT)* in the production system. Here always strived to achieve condition *"Zero Defect"* by way of controlling total in every step of the process. All forms deviations must be identified and corrected as early as possible maybe.
f. Respect towards all people / employees *(respect to people).*
With the method of *Just In Time (JIT)* in the production system of each worker will be given full opportunity and authority to organize and decide whether a flow of operations can be forwarded or must be stopped because of a serious problem in one specific work stations.
g. Decrease any form of uncertainty.
The inventory whose basic idea is expected to anticipate fluctuating demand and all unforeseen conditions, it will turn into *waste* when not immediately used. Similarly, *recruitment* of labor in large numbers is not controlled as it is common in project activities will cause waste if not utilized in time. Therefore in planning and production scheduling must be made and controlled thoroughly. Any form that gives the impression of uncertainty should be possible eliminated and should be included in consideration.
h. Attention in the long run
The seven principles of implementation of *Just In Time (JIT)* in the production system above is not a firm commitment applied in short duration. It must be built on an ongoing basis and is a commitment of all parties in the long run. In short term, there is the possibility of the application *Just In Time (JIT)* in the production system will actually add to the cost of production to follow consequence of process of learning curve.

Characteristics of *Just in Time*

Hansen & Mowen (2005:479) states there are several characteristics basic *Just In Time (JIT)*:

a. Factory Layout.
Just In Time (JIT) replaces this traditional factory layout with a pattern of manufacturing cells. The manufacturing cell consists of machines which are grouped in sets, usually in the form of a half circle. The machines are arranged so they can be used for performing various operations in sequence. Each cell is prepared to produce a particular product or set of products. Product moved from one machine to another from start to finish. The workers are assigned to cells and trained to operate all the machines in the cell.

b. Grouping and empowering employees.
Training of cell workers to perform multiple tasks also has influence on the relocation of support services on cells. In addition to direct production work, cell workers can doing preparatory work,

moving half-finished items from part to another part of the cell, perform preventative care and small improvements, perform quality inspections, and perform tasks cleaning. This multitasking capability is directly related on the pull approach through production.

c. Total quality control.
   Just In Time (JIT) needs to put a stronger pressure on quality management. *Total quality control* is essentially a nonstop workmanship for a perfect quality, effort to get a product design and manufacturing process without defects.
d. Tracking overhead costs.
   A financing system uses three methods for charging for in dividual products : direct search, drive search, and allocation. Of the three methods, search direct is the most accurate so, preferably than the other two methods.
e. Effect of inventory.
   Just In Time (JIT) generally lowers inventory up to the level which is very low. Achievement of insignificant levels of inventory is vital to *Just In Time's* success. *Just In Time (JIT)* refused to use inventory as a solution of this issues. In fact, inventory is not just seen as a waste but as something straightforward related to the ability of companies to compete.

Meanwhile, according to Kusumawati, (2009:104), said there are some main characteristics of companies that have implemented the system *Just In Time :*

a. High quality. Companies that have implemented the JIT system strive to achieve a level of quality where they can operate with low inventory and tight schedules. The JIT system seeks to eliminate inefficient and disruptive sources and involve employees in operations to continue improving. In other words, the company adheres to the concept of better producing high-quality goods at slightly more expensive production costs, than producing goods at the cost of producing a piece of mur ah but of low quality.
b. Low inventory levels. In the JIT system, inventory is considered a waste because with the availability of inventory and storage costs required additional costs. There is not much inventory in the warehouse, just enough to continue the production process to the next work unit and if it is only sent again, so there is a continuous work flow.
c. Flexible production lines. The production system uses *cellular manufacturing technique* that is the *layout* arrangement and the flexible production process equipment so that the goods produced not too often experience displacement and also do not need to enter the place of storage, because product movement is too often regarded as *non value added activity* .
d. Changes in organizational structure that leads to the product. The JIT concept requires that every part of the production process has its own *service department* so that any deviation can be traced as early as possible. Use of information technology effectively. Is one of the main requirements in the application of JIT system, The JIT system is a timely concept so there is no delay from the smallest schedule of schedules *(non scheduled interruption)* that can be tolerated, due to the slightest deviation from the routine schedule will lead to production process bottlenecks.

Differences Method *Just in Time* with Traditional Purchases

Comparison between manufacturing *Just In Time* with manufacturing Traditional according Supriyono (2006:68) :

Table 1
Differences Method *Just in Time* with Traditional

No	Distinguishing Factor	*Just In Time*	Traditional
1.	Characteristics	*Pull Trought System*	*Push Trought System*
2.	Inventory Quantity	a little	Many
3.	Manufacturing Structure	Cell manufacturing	The structure of the department
4.	Labor Qualification	Multidiscipline	Specialist
5.	Quality Policy	Quality control	Tolerance of defective products
6.	Service Facilities	Spread	Centralized

Source : Supriyono (2006:255)

Characteristics is a traditional system of product manufacturing activities based on *sales forecasting* that is expected to occur in the coming period. On this basis, the production section will have a definite production schedule. If the goods produced can not be distributed to the market, then the goods will be stored in the warehouse. In this case the marketing department is responsible for immediately marketing the products that have accumulated in the warehouses of large quantities. Thus, this traditional system promotes a sales and marketing activity. The *Just In Time system* has the opposite characteristics. In this system, the new company will perform production activities only if there is a certain market / customer demand. So the production activity in this system is withdrawn by market demand.

Inventory quantity is one of the effects of *Just In Time* system for the company is to reduce the quantity of inventory significantly. In a minimal amount, the inventory is still owned by the company, especially the finished product inventory awaiting the delivery process to the customer or to the distributor. So the quantity of supplies in the *Just In Time* system persists but is very *insignificant*. Traditional manufacturing systems are also called *push-throught systems.* In this system, the company does the production process regardless of the structure and condition of demand at that time. Therefore, the system is very likely to produce a product in an amount greater than the demand, thus creating a supply of large quantities of *(significant).*

Qualifications of Labor, in a conventional system, the workforce usually specializes in a particular area of expertise. Employees are trained to perform a special job, such as operating a machine. From time to time the tasks assigned to them are relatively unchanged. Thus, they become a specialist workforce. In the *Just In Time* system, which uses cell manufacturing structures, production employees are required to be able to operate all machines in a cell. This is done in order to improve efficiency and reduce costs. Thus the employee is no longer a special engine specialist, but becomes a *multidiciplinary* qualified person.

Quality Policy, in the *Just In Time* system, the company produces goods in limited quantities, as much as requested by the market / customer and has no overproduction at all. Therefore, in this system quality issues are very important. The quality of the goods produced must be perfect, and there is no tolerance at all to the defective product. If there is a defective product and reach the hands of consumers, then this will damage the company's reputation, especially if the company is in a competitive industry. To realize this, the company must have a high commitment to quality and apply the concept of *total quality control* (*total quality control*). Without TQC *Just In Time* system will not work properly. The condition is certainly very different from the conditions that exist in the traditional system. In traditional systems there is a doctrine called *acceptable quality level (AQL)*. The doctrine permits a defective product in a production process, provided the amount does not exceed the percentage number that has been applied previously. This is possible because in the traditional system the number of products produced a lot, so that if there is a defective product, the company still has a chance to sort it so as not to get carried into the hands of consumers. Service facilities are an implication of the use of cell manufacturing structures, so most activities to make certain products no longer use shared facilities. Thus, the service department originally centered and serving the needs in order to produce various types of products, is now undergoing a change that is spread across various manufacturing cells. This must be done, because the *Just In Time* system requires access to service facilities easily and quickly. For example, *Just In Time* requires that the supply of raw materials be done appropriately. To meet those needs it is obvious thatraw material handling can no longer be centered, but is dispersed at several service points close to every manufacturing cell.

***Just In Time* Purchase System**

According to Hansen and Mowen (2006: 477), the concept of purchasing *JIT* (*Just In Time Purchasing*) requiring suppliers to deliver parts and raw materials just in time for production. The *Just In Time (JIT)* purchasing system is a very critical part of the entire *Just In Time (JIT) system* because it involves outsiders, ie suppliers (Agustina, *et.al.*2008).

Purchase *Just In Time (JIT)* can reduce the time and costs associated with purchasing activities in the following way (Agustina, *et.al.*2008) :

(1) Reduce the number of suppliers, so the company can reduce the resources shed in negotiations with suppliers.
(2) Reduce or eliminate the time and cost of negotiations through long-term contracts with suppliers, regarding the terms of purchase, material quality and reasonable price.
(3) Have a buyer or consumer with an established purchase program. An established purchase plan by the buyer or consumer, can provide the supplier with information about the quality requirements of materials and when delivery with a specified time limit according to the production plan.
(4) Eliminate and reduce activities and costs that do not add value to the product, such as activities and storage costs or the cost of moving materials from warehouse to factory.
(5) Reduce time and cost of quality inspection program. Selection of suppliers that can guarantee the timeliness, quantity and quality of purchased goods can reduce the time and cost of inspection.

Organizations that manage retail inventory, wholesalers, distribution, services or manufactures may use the purchase of *Just In Time*. The Supplier sends the necessary materials shortly before the goods are used. The company must obtain a supplier who is willing to ship the item several times or as often as possible in the appropriate quantities according to the requested specifications, rather than receiving items for a week or a month in a single shipment. Suppliers who are unable to meet the company's demand do not need to be involved, as the *Just In Time* system is highly vulnerable to material supply disruptions. If in one component that is not available on time, the whole process can stop. In the context of an empty trading company will resulting in consumers being dissatisfied. Suppliers must provide goods that meet company quality standards (not defective), because the *Just In Time* system is highly vulnerable to defects of defective items not tolerated. Therefore, the supplier must be truly reliable so that quality goods can be obtained without having to do the inspection again.

Cost Efficiency

Understanding efficiency according to (Kuszatmono, 2008) is efficiency is a measure in comparing the use of input plans with realized use or other words of actual use. According to (Kuszatmono, 2008), efficiency is the best comparison between input (input) and output (the result between profit with source sources used), as well as optimal results achieved with the use of limited resources. In other words the relationship between what has been completed. Efficiency is a measure in comparing the use of planned inputs with the realization of input use. If the actual input is used, the greater the savings, the higher the efficiency level, but the smaller the saving input, the lower the efficiency.

The term efficiency has a very specific meaning, usually efficiency is often associated with the ratio of output and input where the greater the ratio ouput or inputnya will be the efficiency of a business. How to increase the cost efficiency that can be done through the system perform better stats, means of production and inputs provided better with related work and better performance also by using policies in various fields right.

Stock

Inventory (*inventory*) is stock or stock of goods that exist in the company (Stevenson, 2014: 179). According Kartikahadi (2007: 278) inventory is one of the most significant current assets for the company in general, especially trading companies, manufacturing, agriculture, forestry, mining, building contractors, and sellers of certain services. Quality, engineering, product, price, overtime, overcapacity, customer responsiveness due to poor performance, *lead time* and overall profitability are things that are affected by inventory levels. There is an important point in relation to the above definition is that inventory is an asset available for sale in the ordinary course of business. This means assets that are classified as inventories are assets that are always intended to be sold or used in the production process. In the manufacturing company inventory consists of three types, namely: (1) Supply of raw materials *(material inventory)*, (2) *Work in inventory inventory*, (3) Finished goods inventory *(finished good inventory).*

There are several reasons for the company to organize or provide raw materials inventory, among others: (1). Raw materials used for processing of production within the company can not be purchased or imported one by one for the required amount and when the raw material will be used for the production process. (2). If there is a state of raw materials required for production process is not in the company, or the company does not have raw material inventory, while the ordered raw materials have not arrived, then the production process will be stopped because there is no raw materials for production process activities. P roses this production will be able to walk again if the raw material has come order or purchase abruptly for the production process and at that time at a cost of more expensive ones. (3). Company management must be able to decide to hold raw material inventory in the unit enough, in order to avoid the lack of raw materials.

Raw materials are goods purchased from suppliers *(suppliers)* and will be used or processed into a finished product that will be generated by the company (Sofyan, 2013: 20). Without raw material inventory, then a company will not run its production system. The raw materials in the company are used as materials to be processed into finished goods through the production process. In the system of *Just-in-Time* (JIT) is intended to apply supplies of goods only in the quantities needed it.

According Firdayanti (2010, 224) inventory in *just in time* is inventory designed to get the goods appropriately time. The inventory of *just in time* requires the need for inventory hammer because there is no production causing the accumulation or waste of purchase. In the *Just in Time* (JIT) system it is intended to apply the purchase of goods only in the required quantity only.

Company operational activities related to inventory, surely will be found problem of costs associated with inventory. Cost is a sacrifice made by the company to obtain goods / services. Simamora (2012: 40) reveals that "cost (*cost*) is cash or cash equivalent sacrificed (paid) for goods or services expected to provide benefits (earnings) at present or in the future for the company". According to Hansen and Mowen (2009: 208) inventory costs include :

1) Ordering *cost*.
2) Preparation costs (S*etup cost*).
3) Storage costs (*Carrying cost*).

Previous Research

In this research, it is found that the research is relevant to the problems studied. Past researcher Christyandhika Putra & Farida Idayati (2014) examined the Implementation of *Just In Time* Methods to Improve Cost Effectiveness of Raw Materials with dependent and independent variables in the form of cost effectiveness and *Just In Time System.* The results show that the efficiency of the value of the raw material supply from the *just-in-time* policy is compared to when the company uses the traditional system.

Furthermore, Sajida Nuril Alvy Zunariyah (2015) examined *Just In Time* Implementation Analysis (JIT) as an Alternative to Raw Material Inventory Control to Assess Cost Efficiency at PT Kediri Tani Sejatera with dependent and independent variables in the form of cost efficiency and *Just in Time* system. The results show that the Year 2010 to the Year 2014 after using *Just In Time* show their efficiency, but in the year 2012 to 2013 occurred pe mborosan because of the high cost of reservation in 2012.

Furthermore, Adriany Pratiwi Diaz & Endang Dwi Retnani (2015) examines the Application of JIT Purchase Method of Raw Material in Improving the Efficiency of Raw Material Cost with dependent and independent variable in the form of cost efficiency of raw materials and *Just in Time* method. The results show that to improve the efficiency of raw material inventory , the company should maintain the *Just In Time* (JIT) method and establish an information network with suppliers

Furthermore Zulhilmi (2007) examines the Implementation of *Just In Time* as a Cost Control of Raw Materials Made in Metal Made Acrylite At Company PT. Anugrah Cipta Sejahtera with dependent and independent variable in the form of raw material inventory control and *Just in Time* method. The results show that the existence of material inventory inventory management of raw ineffective and redundant resulting in high storage costs. However, if a company applies *just in time* it should also be well studied whether the supply supplier can deliver the raw materials well.

Furthermore, Mochammad Yusuf (2010) examines the Analysis of Implementation of *Just In Time* System on Raw Material Inventory at Rainbow Lawang Weaving Company with dependent and independent variable in the form of raw material inventory and *Just in Time* system. The result shows that *just in time system* can be applied to Pelangi Lawang weaving company, with the consideration that the company can save the raw material inventory cost of Rp. 31.825. 840, 95,-

III. RESEARCH METHODS

Types of Research

The research used in this research included into the type of qualitative research using descriptive method. Descriptive research is a study of problem problems in the form of the current facts of a population. Qualitative method is used to get in-depth data, a data that contains meaning (Sugiyono, 2008: 8). Based on this understanding, it can be concluded that qualitative descriptive research is used to obtain facts on a problem studied through the data collected to provide useful recommendations

In this study, researchers participated in the production process in UD Sido Rukun to obtain information on data in the field to strengthen research data. Hence the most suitable qualitative research method used in this study. This research will be able to capture a variety of qualitative information by thoroughly describing the facts. This method is not limited to the collection and compilation of data, but also includes the analysis and interpretation of the data.

Types and Data Sources

There are two types of data used in this research are :

1. Primary data is data obtained directly from the observation (*observation*) in the study sites and interviews with interested parties.
2. Secondary data is data obtained from other parties qualitatively who have relevance i with problem in this research.

The data source is an important element that must be done in conducting research, because it can support the accuracy of data that may affect the final conclusion of the study. In qualitative research, it does not use the population (as in quantitative research) because qualitative research departs from certain cases that exist in certain social situations and the results of its study will not be applied to the population (not to generalize) but transferred elsewhere to social situations that have similarity with the social situation under study (Sugiono *in* Prastowo, 2014: 195).

The sample in this study is also not called respondent, but as a resource or research informant. Informants are people who can provide the main information needed by researchers. Informants are people who are used to provide information about the background situation (condition or location) of the research (Moleong, 2008: 132). Informants who have been established by the researcher will be the object to be interviewed, selected with certain considerations and objectives.

Data Collection Technique

Data are descriptions of a thing, can be something that is known or considered or perceived, or a fact that is illustrated through numbers, symbols, codes and others. Data collection is the recording of events or matters or descriptions or characteristics of some or all elements of the population that will support or support the research (Hasan, 2006: 82). Data collection techniques used to obtain data in this study are:

(1) Interview, which is a way of collecting data by conducting interviews directly with the company to obtain the necessary data and directly related to the research. The conversation was conducted by two parties, the interviewer (*interviewer*) who asked questions and interviewees (*interviewer*) who provide answers to the question (Moleong, 2008: 186).
(2) Observation, which is a way of collecting data by holding observations directly on the object of research and record all necessary data. Observation allows researchers to see the world as seen by the subject of research, living at that moment, capturing the meaning of the phenomenon in terms of the understanding of the subject, capturing the cultural life from the point of view and the rhythms of the subjects in the circumstances of the time (Moleong, 2008: 175).
(3) Documentary, which is a way of collecting data by way of recording the data owned by the company that has to do with the problem that the authors pointed out.

Data Analysis Technique

The process of data analysis in scientific research is a very important and decisive part in achieving the research objectives that have been set. In this study analisis are done is by way of comparing the theories obtained from literature study with data obtained during the survey and field study. From these comparisons, the authors then draw conclusions and as an improvement step given some suggestions that if dapa t be done and beneficial to the company. The steps to be undertaken by the researcher are as follows: (a). Collecting data . (b). Learn and process data that has been obtained. (c). Data analysis. (d).Conclusions and recommendations.

IV. DISCUSSION

Raw Materials Purchase System *Just in Time*

In *just-in-time systems are* required to maintain a partnership relationship between a company and a supplier of raw materials so as to solve problems such as by creating an information flow that can change the supplier's reaction to the needs of the company, so that suppliers can know when and how much goods should be sent so that the waiting time can minimized.

A just in time approach is a different approach to controlling total inventory costs. In order to achieve the goal of *just in time* that is minimize the cost of inventory include the cost of storage, maintenance costs, damage costs, insurance costs and other costs then the company must have a support system as well as a close relationship with suppliers.

Implementation of *just in time* purchase at UD. Sido Rukun that the company does not store raw materials in the sense that the supply of raw materials in the warehouse is zero. The company only buys raw materials according to the need to manufacture the product. Because the company wants the maximum efficiency of raw materials that is by eliminating the cost of inventory, especially for storage costs, the expenditure for storage costs is zero rupiah.

The system *just in time* lowering purchasing costs by way of limiting the number of suppliers as little as possible. When suppliers bit, meaning the supply quantity of each - each large enough supplier, and the company *just in time* would be the *price the customer* or the dominant buyer for suppliers. Companies with *just in time system* trying to establish long-term and short-term cooperation relationships to suppliers, and requesting flexible delivery in accordance with the company's production schedule. Because purchasing from a few suppliers (but in large quantities) with short-term and short-term contract systems that can be controlled by the company, the purchase price or purchase cost can be reduced.

Raw Material Purchase Frequency

The frequency of purchasing or ordering in a *just in time system is* more frequent when compared to traditional purchases. That purchase and delivery can be done on a daily basis depending on the production needs of the company. Therefore the supplier's location in the concept of *just in time is* usually adjacent or even one location with the buyer. For that to facilitate the delivery of goods orders, suppliers sometimes have to use special transport vehicles dedicated only to one company only.

Frequency of purchase of raw materials of cement, fine sand, coarse sand, stone ash, and split is usually sent by the supplier once a month so that in one year occurs (12) times the frequency of delivery of the order goods, if the frequency of purchase *just in time the* company wants the frequency of ordering materials standard in one month is done twice, thus the delivery frequency of *just in time* system material will be (24) times a year.

Storage Fee

In relation to storage costs, on the application of *just-in-time systems the* company wants maximum profits by way of inventory efficiency in a way that the company does not store raw material inventories in the warehouse. So the company does not spend for storage, then the storage cost zero rupiah.

In connection with the cost of enterprise storage provides storage costs for material percentage of raw cement, fine sand, coarse sand, stone dust, and a split of 10 % of the average value of inventory. While the average value of material inventory comes from the raw material needs per month multiplied by the price of raw materials divided by two. Based on the above explanation, it can be presented in the table below :

Table 2
Traditional Storage Costs with *Just in Time* System
Year 2017

No	Raw Material	Order Frequency	
		Traditional (Rp)	***Just in Time (Rp)***
1.	Cement	6,600,000	3,300,000
2.	Smooth Sand	102.000	51.000
3.	Rough Sands	420,000	210,000
4.	Stone Ash	1,710,000	855,000
5.	Split	2,000,000	1,000,000

Source : UD. Sido Rukun, processed

Booking Fee

In the system *just in time* realized will be a problem that happens in the company and the company can be overcome by among others by request in accordance with production orders, enter into cooperation agreements with suppliers with long term and short term, and repair information. Demand that matches the order will make the purchase requirement predictable so there is no need for reorder. Long-term contracts provide security guarantees to suppliers that they will be dropped at supply undesirable.

Suppliers also expect cooperation with companies that can help companies lower raw material costs per unit with tersus trying to lower material costs and shipping costs.

Here is the amount of booking fees incurred by UD. Sido Rukun for each raw materials can be seen in the table below :

Table 3
Traditional Booking Costs With *Just in Time* system
Year 2017

No	Raw Material	Order Frequency	
		Traditional (Rp)	***Just in Time (Rp)***
1.	Cement	2.550.000	5.100.000
2.	Smooth Sand	200,000	400,000
3.	Rough Sands	400,000	800,000
4.	Stone Ash	2,200,000	4,400,000
5.	Split	1.050.000	2.100.000

Source: UD. Sido Rukun, processed

Cost Disadvantages of Inventory

The following is the cost of the lack of inventory issued by UD. Sido Rukun for each raw materials can be seen in the table below:

Table 4
Cost Disadvantages of Traditional Inventory With *Just-Time* System
Year 2017

No	Raw Material	Order Frequency	
		Traditional (Rp)	***Just in Time (Rp)***
1.	Cement	0	629.100
2.	Smooth Sand	0	38,050
3.	Rough Sands	0	63,300
4.	Stone Ash	0	352,250
5.	Split	0	223,500
		0	**1.306.200**

Source : UD: Sido Rukun, processed

Calculating Inventory Costs With *Just-Time* Systems

For clarity will the author discusses the extent of the efficiency of the application of the stem *just in time* as follows :

1. Cement, the following is an explanation of the cost of inventory of cement materials with the calculation of the system *just in time,* based on the above explanation, it can be made a comparison table of raw material inventory cost of cement between traditional purchasing policy with *just in time system* as presented below :

Table 5
Comparison of Traditional Purchase With *Just-Time* System of Cement Raw Materials
Year 2017

No	Description	Traditional (Rp)	*Just in Time (Rp)*
	Purchase Fee		
1.	Rp.55.000 / sak / th x 30.240 / sak / th	1.663.200.000	
2.	Rp.55.550 / sak / thx 28.800 / sak / th		1,599,840,000
	Storage Fee		
1.	Rp.1.200 / sak / th x 5.500 / sak / th	6,600,000	
2.	Rp. 1,200 / sak / th x 2,750 / sak / th		3.300.000
	Booking Fee		
1.	Rp. 84.32 / sak / th x 30.240 / sak / th	2,549,836	
2.	Rp. 88.53 / sak / th x 28.800 / sak / th		2,549,664
	Cost of inventory shortage		
1.	There is no shortage of inventory	-	
2.	Rp. 1 . 471 / kg x 36 kg / month x 12 months		635391

Source: UD Sido Rukun, processed

2. Fine sand , based on the above explanation, it can be pronounced table comparison of raw material inventory cost of fine sand between traditional purchase policy with *justin time* system as presented below :

Table 6
Comparison of Traditional Purchase with System *Just in Time* Raw Material Sand
Year 2017

No	Description	Traditional (Rp)	*Just in Time (Rp)*
	Purchase Fee		
1.	Rp. 170.000 / dam / th x 151,2 / dam / yr	25,704,000	
2.	R p. 171.700 / dam / th x 144 / dam / th		24.724.800
	Storage Fee		
1.	Rp. 800 / dam / th x 127,5 / dam / th	102,000	
2.	Rp. 800 / dam / th x 63.75 / dam / yr		51,000
	Booking Fee		
1.	Rp. 84,32 / dam / th x 151,2 / dam / yr	12,749	
2.	Rp. 88.53 / dam / th x 144 / dam / th		12,748
	Cost of inventory shortage		
1.	There is no shortage of inventory	-	
2.	Rp.534 / kg x 6 kg / month x 12 months		38430

Source: UD. Sido Rukun, processed

3. Rough sand, based on the above explanation, it can be pronounced table comparison raw material inventory cost of coarse sand between traditional buying policy with *just intime* system as presented below :

Table 7
Comparison of Traditional Purchase With System *Just in Time* Raw Materials Raw Sand
Year 2017

No	Description	Traditional (Rp)	*Just in Time (Rp)*
	Purchase Fee		
1.	Rp. 140.000 / dam / th x 756 / dam / yr	105,840,000	
2.	Rp. 141.400 / dam / th x 720 / dam / th		101.808.000
	Storage Fee		
1.	Rp. 2,100 / dam / th x 200 / dam / th	420,000	
2.	Rp.2.100 / dam / th x 100 / dam / th		210,000
	Booking Fee		
1.	Rp. 84,43 / dam / th x 756 / dam / th	63.745	
2.	Rp.88.53 / dam / thx720 / dam / th		63.741
	Cost of inventory shortage		
1.	There is no shortage of inventory	-	
2.	Rp. 166 / kg x 32 kg / month x 12 months		63.933

Source : Ud. Sido Rukun, processed

4. Ash stone, based on the above explanation, it can be made table comparison of raw material inventory cost of stone ash between traditional purchasing policy with *just in time* system as presented below :

Table 8

Comparison of Traditional Purchase With System *Just in Time* Raw Material Ash stone Year 2017

No	Description	Traditional (Rp)	*Just in Time (Rp)*
	Purchase Fee		
1.	Rp. 950.000 / dam / th x 453,6 / dam / yr	430.92 million	
2.	Rp. 959.500 / dam / th x 432 / dam / yr		414,504,000
	Storage Fee		
1.	Rp. 900 / dam / th x 1900 / dam / th	1,710,000	
2.	Rp. 900 / dam / th x 950 / dam / th		855,000
	Booking Fee		
1.	Rp. 84,32 / dam / th x 453,6 / dam / yr	38.247	
2.	Rp. 88,53 / dam / th x 432 / dam / yr		38.244
	Cost of inventory shortage		
1.	There is no shortage of inventory	-	
2.	Rp. 1647 / kg x 18 kg / month x 12 months		355.772

Source: UD. Sido Rukun, processed

5. Split, based on the above explanation, it can be pronounced table comparison of inventory cost of raw materials split between traditional purchasing policy with *just in time* system as presented below:

Table 9
Comparison of Traditional Purchases With The System *Just in Time* Split Raw Materials Year 2017

No	Description	Traditional (Rp)	*Just in Time (Rp)*
	Purchase Fee		
1.	Rp. 800.000 / dam / th x 315 / dam / yr	252.000.000	
2.	Rp. 808.000 / dam / th x 300 / dam / th		242.4 million
	Storage Fee		
1.	Rp.2.500 / dam / th x 800 / dam / th	2,000,000	
2.	Rp.2.500 / dam / th x 400 / dam / th		1,000,000
	Booking Fee		
1.	Rp. 84.32 / dam / th x 315 / dam / th	25.560	
2.	Rp. 88.53 / dam / th x 300 / dam / th		26559
	Cost of inventory shortage		
1.	There is no shortage of inventory	-	
2.	Rp. 2 . 351 / kg x 8 kg / month x 12 months		225.735

Source: UD. Sido Rukun, processed

From the calculation of the cost of raw material inventory which has been using the traditional method with the raw material inventory cost by using the system *just in time* during the year of 2012 there is a difference. For more details can be seen in the table below :

Table 10
Comparison of Total Cost of Raw Material Supply
Between Traditional Methods with *Just in Time* Systems
Year 2017

Raw Material	Traditional (Rp)	Just in Time (Rp)	Efficiency (Rp)
Cement	1.672.349.863	1.606.325.055	66.024.808
Smooth sand	25,818,749	24,826,975	991.774
Rough sands	106.323.745	102.145.674	4.178.071
Stone ash	432.668.247	415.753.016	16.915.231
Split	254.025.560	243.652.249	10373.266
Total	**2.491.186.164**	**2.392.703.014**	**98.483.150**

Source: UD. Sido Rukun, processed

Based on the above table it can be seen the value of raw material inventory in UD. Sido Rukun in 2016 in accordance with the results Rp. 2.491.186.164, - while the results of *just in time* is Rp. 2,392,703,014 , - so that there is efficiency of raw material cost value from *just in time* policy of Rp.98.483.150, -

V. CONCLUSION

From the data - data obtained by the author during the study on UD. Sido Rukun then it can be concluded as follows :

1) In conducting the purchase activity of UD raw material inventory cost determination. Sido Rukun using traditional methods, so that the waste as in the warehouse there is a lot of raw material inventory. Mak a will there is additional cost of storage, so consequently the company will me bear the cost of supplies of raw fairly high and there are no efficiencies of cost inventory.
2) In an effort to improve cost efficiency supplies ba ku companies can use the method of *Just In Time* , the purchase was made with a number of y ang small and shipments periodically, so as to reduce the cost of storage. *Just In Time* method will not be done without a commitment to total quality control, which is basically trying to improve the quality so that the production process is free from damage. Therefore, the company must make a long-term contract of mutual benefit between *suppliers* and company. With the flexibility of shipping and the quantity of the material high so inspection fees, orders and storage can be minimized. The advantage for the *supplier* is security pembe lian in the long term.
3) From the application of *Just In Time* above, it can be known the value of UD raw material inventory. Sido Rukun in 2016 in accordance with the results of interest n traditionally Rp. 2.491.186.164 , - while the results of calculations *Just In Time* value of raw material inventory in 2016 amounted to Rp. 2.392.703.014 , - so that there is efficiency of raw material inventory from *Just In Time* policy of Rp. 98.483.150

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